

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Schwalbe et al. Attorney Docket No: CELL0017
Serial No: 09/617,068 Group Art Unit: 1743
Filed: July 16, 2000 Examiner: Levkovich, Natalia A.
Confirmation No: 7221
Title: SEQUENTIAL REACTION SYSTEM

FOR ELECTRONIC FILING

ELECTION TRANSMITTAL LETTER

Bellevue, Washington 98004

December 21, 2007

TO THE COMMISSIONER FOR PATENTS:

A. Election Transmittal

Transmitted herewith is an election in the above-identified patent application.

- ☒ 1. No additional claim fee is required, as shown below.
☐ 2. The claim fee has been calculated, as shown below.
☐ 3. Fees, as calculated below, in the amount of \$_____, will be charged to a credit card during electronic submission.

B. Request for Constructive Petition for Extension of Time

It is requested that any concurrent or future reply submitted in the present application requiring a petition for an extension of time under 37 CFR 1.136(a)(3) for timely submission be treated as incorporating a petition for extension of time for the appropriate length of time. It is also requested that any additional required fees under § 1.17, including all required extension of time fees, be charged to Deposit Account No. 01-1940, thereby constructively petitioning for any necessary extension of time to maintain the present application in a pending state.

<u>Computation of Fee For Claims as Amended</u>					
	<u>Claims Remaining after Amendment</u>	<u>Highest Number Previously Paid For</u>	<u>Present Extra</u>	<u>Rate</u>	<u>Additional Fee</u>
Total Claims	21	27	-0-	x \$25	\$ -0-
Independent Claims	5	5	-0-	x \$105	-0-
TOTAL ADDITIONAL FEE FOR THIS RESPONSE					\$ <u>-0-</u>

C. Additional Fee Charges or Credit for Overpayment

Please charge any additional fees or credit any overpayment to Deposit Account No. 01-1940.

Respectfully submitted,

/mike king/
Michael C. King
Registration No. 44,832

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ELECTION IN RESPONSE TO RESTRICTION REQUIREMENT

Bellevue, Washington 98004

December 21, 2007

TO THE DIRECTOR OF THE PATENT AND TRADEMARK OFFICE:

The following is in response to a Restriction Requirement dated December 12, 2007, in which the Examiner restricted the above-identified patent application. The Examiner indicates that there are five groups of patentably distinct inventions defined by the claims in this application, as follows:

- Invention in Group I: Claims 1-4 and 6-14, drawn to a reaction system comprising a first reactant supply, a first supply valve, a solvent supply, a reaction module, an output valve coupled to a product collector and a controller connected to the first reactant supply, to the first supply valve and to the product collector, the controller being configured for controlling the first reactant supply and the first supply valve to introduce each reactant required to produce chemical products in a desired order and for controlling the solvent supply to flush the reactor such that a fluid discharged from the reaction module alternates between one of the different desired chemical products and the solvent containing any residual chemical product;
- Invention in Group II: Claims 15-19, drawn to a reaction system comprising a first fluid supply, a second fluid supply, a reactor, a solvent supply, a fluid collector, a spent solvent reservoir and a controller connected to the first fluid supply, to the second fluid supply, to the solvent supply, to the reactor, to the spent solvent reservoir and to the fluid collector, the controller being configured for controlling the system such as to introduce each reactant required to produce chemical products in a desired order and for controlling the solvent supply to flush the reactor such that a fluid discharged from the

1 reaction module comprises either one of the different desired chemical
2 products, or the solvent containing any residual chemical product;

- 3 ○ Invention in Group III: Claim 28, drawn to a reaction system comprising a
4 first reactant supply, a first supply valve, a reaction module, an output valve
5 coupled to a product collector, an automated detector disposed between the
6 output valve and the reaction module, and a controller connected to the first
7 reactant supply, to the first supply valve, to the reaction module and to the
8 product collector, the controller being configured for controlling the first
9 supply valve to select the first desired reactant, for controlling the output valve
10 to select a product chamber into which the product is directed, and for
11 responding to the signal from the detector to actuate the output valve such as to
12 selectively couple the reaction module to the product collector and to a spent
13 solvent reservoir;
- 14 ○ Invention in Group IV: Claim 29, drawn to a reaction system comprising a
15 reactor, a first reactant delivery structure, a solvent delivery structure and a
16 controller connected to the first reactant delivery structure and to the solvent
17 delivery structure, the controller being configured for controlling the first
18 reactant delivery structure to introduce a reactant required to produce a first
19 desired product into the reactor for a period of time sufficient to produce a
20 desired quantity of the first desired product, for controlling the solvent delivery
21 structure to flush the reactor with the solvent after the desired quantity of the
22 first desired product has been produced; and for repeating the previous two
23 steps for each additional reactant required to produce an additional desired
24 product, such that a volume of solvent separates each different desired product
25 discharged from the reactor to produce the substance library of different
26 desired chemical products, such that a flow of fluid discharged from the reactor
27 comprises different desired chemical products separated by the solvent;
- 28 ○ Invention in Group V: Claim 30, drawn to a reaction system comprising a
29 reactor, a first reactant delivery structure, a solvent delivery structure, an
30 output valve, a detector and a controller connected to the first reactant delivery
structure, to the solvent delivery structure, to the output valve and to the
detector, the controller being configured for controlling the first reactant
delivery structure to introduce each reactant required to produce chemical
products in a desired order, for controlling the solvent delivery structure to
flush the reactor, and for controlling the state of the output valve based on the
signal provided by the detector, such that when the signal from the detector
indicates that a solvent is being discharged from the reactor module, the output
valve is placed in fluid communication with the spent solvent collection
volume, and when the signal from the detector indicates that a solvent is not
being discharged from the reactor, the output valve is placed in fluid
communication with a product collector.

1 Election:

2 In response to this Restriction, applicants hereby affirmatively elect the claims of Group I
3 (i.e., Claims 1-4 and 6-14; Invention I), *with traverse*, subject to applicants' right to file one or more
4 divisional applications directed to the non-elected inventions.

5 Traversal of Restriction Requirement

6 Applicants respectfully traverse the restriction requirement, and submit that Groups II, III, IV,
7 and V (i.e., the inventions identified in Groups II, III, IV, and V) should be examined together,
8 because the inventions *DO* overlap in scope and are therefore *NOT* mutually exclusive, and because
9 there is no serious burden with respect to search and examination. Applicants note that this traverse
10 IS NOT arguing that the claims identified in these Groups represent patentably *indistinct* inventions;
11 instead, applicants are merely arguing that it would be efficient to search and examine the inventions
12 together, because *they do overlap in scope*, thus, it is likely that there will be overlapping search
13 results if a search is performed for all of the claims.

14 The Examiner has asserted that the inventions are distinct because the inventions of
15 Groups I-V are directed to reaction systems that have materially different designs and modes of
16 operation. Under MPEP § 806.05 (j), related inventions can be shown to be distinct if:

17 (1) the inventions as claimed are either not capable of use together or can have a
18 materially different design, mode of operation, function, or effect;

19 (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and

20 (3) the inventions as claimed are not obvious variants.
21

22 With respect to inventions identified in Groups I-V, it appears that the Examiner has
23 considered such inventions to be distinct and restrictable because the various inventions are not
24 exactly identical, i.e., there are some differences between the elements recited in the claims of these
25 Groups.

26 Applicants respectfully note that under MPEP § 806.05 (j), *ALL* three requirements must be
27 satisfied in order to show that the related inventions are distinct. However, it is clear that in regard to
28 the second requirement reproduced above, that the inventions *DO* overlap in scope, and therefore are
29 *NOT* mutually exclusive. It must be stressed that this *IS NOT* a suggestion that the inventions are
30

1 obvious variants, merely a recognition that the inventions do share common features and accordingly,
2 overlap in scope.

3 Specifically, the inventions identified in these Groups share the following elements (the
4 elements noted below use different wording than employed in the claims; however, each element
5 noted below appears in the claims for the inventions of Groups I-V).

6 *An automated sequential reaction system for automatically and sequentially producing a*
7 *substance library of different desired chemical products including:*

8 *a reactor*

9 *means to provide reactants to the reactor;*

10 *means to provide a solvent to the reactor (not positively recited in Claim 28/invention*
11 *identified in Group III, but solvent is clearly referred to in the body of the claim; furthermore, if*
12 *necessary, applicants will amend Claim 28 to positively recite a solvent source); and*

13 *a controller configured to facilitate production of the substance library of different desired*
14 *chemical products.*

15 With respect to MPEP § 806.05 (j), neither subparagraphs 1 or 2 appear to apply to the
16 inventions identified in Groups I-V. The inventions identified in Groups I-V have a large degree of
17 similarity with respect to: their design (structurally they share many elements), their mode of
18 operation (the inventions combine reactants under controlled conditions to generate a substance
19 library of desired products), their function (the inventions share the common function of combining
20 reactants under controlled conditions to generate a substance library of desired products), and their
21 effect (the generation of the substance library of desired products).

22 Even more significantly, referring to MPEP § 806.05 (j)(2), under no reasonable interpretation
23 can the inventions identified in Groups I-V be considered to be *mutually exclusive*. As explained
24 above, there is a large degree of overlap between Inventions I-V and no basis for concluding that they
25 are mutually exclusive.

26 Aside from the large degree of overlap, there is one significant difference between the
27 inventions (however, as discussed below, that difference *is not* a mutually exclusive difference). The
28 inventions identified in Groups I, II, and IV employ a controller that ensures the desired
29 product/solvent/product (i.e., P-S-P) discharged from the reactor (see applicants' FIGURE 4) is
30 achieved (by manipulating the flow rates of the reactants and solvents, and the known volumes of the

1 fluid lines and the reactor, as disclosed in the specification as filed). The inventions identified in
2 Groups III and V employ a detector disposed downstream of the reactor, to conclusively determine
3 whether a fluid discharged from the reactor at any point is a product or solvent (i.e., rather than
4 simply relying upon the known system parameters (flow rates and volumes), a detector verifies that
5 the discharge is or is not a solvent). Those two techniques are not *mutually exclusive*, because as
6 disclosed in applicants' specification, the detector can be used *in addition* to the controller. In other
7 words, a controller configured to ensure the P-S-P discharge is achieved, and a detector configured to
8 determine if the discharge is a product or a solvent, are not mutually exclusive, and can be
9 implemented together, as is disclosed in the final paragraph on page 16 of applicants' specification
10 (reproduced below).

11
12 The detection device is considered an optional component, because system
13 controller 12 precisely controls the flow rates of reactants through the system, and
14 given a known system volume, the system controller can determine with precision
15 when changes between a desired chemical product and solvent exiting reaction
16 module 22 occur, and thus, can control outlet valve 39 to divert spent solvent to
17 spent solvent reservoir 37 and the desired chemical product to automated product
18 collector 38. The incorporation of detection device 34 provides a check to ensure
19 that product and spent solvent are properly separated. If the value of the products
20 being produced is high, as is the case with many experimental compounds used in
21 research applications, then it will likely be desirable to include detection device 34
22 to safeguard the desired chemical product being produced and collected. It should
23 also be noted that incorporating flow sensors within sequential reaction system 10
24 to verify that the flow rate conditions commanded by system controller 12 have
25 actually been achieved provides system controller 12 with a feedback signal that
26 can be used to confirm that the material exiting reaction module 22 changes
27 between the desired chemical product and the spent solvent. Those of ordinary
28 skill in the art will readily recognize that given flow rate data and known volumes
29 of the fluid paths in the system, the actual volumes delivered can readily be
30 determined.

31
32 Clearly, because there is substantial overlap in scope between the inventions, and the
33 inventions **are not** mutually exclusive, the first and second requirements for the inventions to be
34 distinct under §806.05 (j) **are not** met, and restriction is not proper.

35
36 Furthermore, it must be noted that due to the large degree of overlap between the inventions,
37 it is likely that a search for any of the inventions will provide references relevant to the other
38 inventions, thus there will be no additional burden to examine the inventions together. Indeed, for the

1 sake of efficiency, the inventions should be examined together, due to their similarity and
2 overlapping scope.

3
4 Respectfully submitted,

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7
8 /mike king/
9 Michael C. King
10 Registration No. 44,832

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